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AND

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Phragmatobia assimilans n. var. **franconia,** Pl. III, fig. 2.

BY ANNIE TRUMBULL SLOSSON.

(See Vol. II, No. 1, p. 2.)

Red. Abdomen conical, short and stout, with darker dorsal and lateral lines; pilose. Thorax darker and still more pilose. Primaries rather thinly clothed with scales, the ground color red, thickly sprinkled with dark brown, but with color of under ground showing through, so as to make the general tint a reddish chocolate; two discal dots connected by line, and two diffuse transverse lines, all of leaden black. The anterior line is arcuate, the posterior runs obliquely to median vein, then curves and takes a sinuously oblique course to inner margin. Secondaries pale red with two small discal dots, and a submarginal band somewhat irregular and interrupted, of leaden black. Antennæ simple, whitish. Underside of primaries and secondaries an almost even tint of bright red; the submarginal band on secondaries and discal dots of both sets of wings showing through faintly.

Described from one female, taken at light, May 24, 1890, at Franconia, N. H.

On three species of Hymenoptera from East Africa.

BY WILLIAM J. FOX.

The three species of Hymenoptera mentioned herein represent a portion of a small collection of insects collected by Dr. Wm. L. Abbott, on Mt. Kilima Njaro, E. Africa, at an elevation of 4000 feet, and presented by him to the American Entomological Society.

Sphex Abbotii n. sp.—♀. Black; head and thorax clothed with long black pubescence, which is short and rather bristly on the dorsulum, and intermingled with griseous on cheeks and sides of the thorax; clypeus feebly and sparsely punctured, with a shallow depression centrally, before the anterior margin with a strong transverse impression, the anterior margin, medially incurved, with a slight tooth or process on each side of the incurvation of inner eye; margin not altogether parallel as they begin to converge at a point opposite the ocelli; labrum acutely carinated on its anterior portion, the carina projecting sharply over its margin; a distinct impression extends from lower ocellus to between the base of antennæ; the ocelli placed in a V-shaped furrow; thorax on the sides shining, finely punctured, the dorsulum very finely rugose; scutellum with a strong medial impression; metathorax above coriaceous, impunctate, with a distinct longitudinal furrow, which is broader and deeper at apex, on the sides the metathorax is finely punctured; stigma furrow curved, foveolate; wings brownish black, with a strong violaceous reflection, first recurrent nervure received by the second submarginal cell before its apex, the second being received by the third submarginal cell between its base and middle, and is strongly bent towards the apex of the wing, third submarginal cell much narrower above than beneath; the anterior tarsi with a row of long spines posteriorly, the first joint with three spines in the middle of its anterior margin; abdomen shining, the venter with a few long black hairs. Length 30 mm.

One specimen.

Belonogaster rufipennis De Geer.

One specimen.

Xylocopa nigrita? Fab.

One specimen, which agrees tolerably well with the short diagnosis given by Smith (Tr. Ent. Soc. Lond., 1874, p. 261), but it has the anterior and posterior femora entirely black, and is 12 mm. longer. Not having specimens of *nigrita*, I am in some doubt as to the identity of this specimen. The length is 40 mm.

Observations on the butterfly, Paphia troglodita.

BY PROF. R. R. ROWLEY.

I have studied this species through the last six or seven summers, in the field, on its food-plant and in my rearing jars, and am quite well acquainted with its habits. Perhaps some of my observations will be of interest to the readers of ENTOMOLOGICAL NEWS.

The imago is one of our hardiest butterflies, appearing early in the Spring and lingering late in the Autumn. I have seen it on pleasant days in late March and early April at sunny spots in the woods darting from the trees to the dry leaves that cover the ground, and away again at the slightest noise. At that season it also frequents sunny south hillsides, and is always very active, being at all times a difficult butterfly to take in the net.

The last brood of imagos appears in early October and often flies till November, appearing in the Spring as a very ragged and anything but handsome insect.

As its food-plant, *Croton capitatum*, is an annual, slow to germinate, and tardy in its growth, the eggs for the first brood are not laid till May. It hardly seems possible that these torn and faded butterflies of March should linger till May to fulfil the mission of nature, but they are fitted by that same nature to survive the frosts of Winter, and why should they not adapt themselves to their surroundings and accommodate themselves to circumstances?

The eggs hatch in from four to six days. They are round, apparently smooth, and, when first laid, of a pale sky-blue, almost transparent appearance, growing yellowish and opaque in two or three days.

There are, perhaps, three broods of butterflies in a season, but this is a hard question to determine, as there is a constant intermingling of the broods, the same plant often supporting eggs, freshly hatched larvæ, half grown and full grown caterpillars at the same time.

Although *Croton capitatum* is an abundant plant here, the ♀ *Troglodita* seems to be rather choice of a place for her eggs and out of a cluster of weeds will select one or two to the neglect of the others, even depositing as many as four or five and often two eggs on the underside of one leaf.

Again, in neglected fields or pastures, you may wade through thousands of crowded plants with rarely a sight of a larva, or examine closely the great patches of *Croton* in the woods with little reward for your trouble.

It is by the roadside, in the cultivated fields, or along the sandy or gravelly beds of streams that the plants seem especially inviting to the females, and thrifty isolated weeds are often completely defoliated by the larvæ in late Summer.

Where the larvæ are abundant an occasional pupa is found suspended beneath a shelter made by fastening two or three leaves together by their edges with an underlining of silk, but search among neighboring stones and chunks fails to disclose chrysalids, a fact that sets one to wondering if the larvæ ever leaves its food-plant to suspend for pupation. I have never seen a larva on the ground, yet they must sometimes travel from plant to plant, as a few caterpillars soon defoliate a young *Croton* plant, and such leafless weeds are often seen without even a place for the suspension of a pupa.

In the rearing jars more than half of the larvæ, just prior to suspension, manifest no more activity than they have during their sluggish larva-hood, but commence at once to construct a shelter, while a much smaller number spin ladders of silk up the glass sides and suspend from the underside of the cover at the top.

The young larva, as soon as it begins to eat, commences the construction of a perch much as the larva of *Limenitis* is known to make, by using waste bits of leaf and excrement, fastened and stiffened with silk. This perch is usually at the apex of the leaf, but once I found two perches on the same leaf, and one was lateral. The little caterpillar rests on this perch when not feeding, and it serves, undoubtedly, for protection to the delicate creature against its keen-eyed enemies whatever they may be.

At the second molt the larva has developed a new building instinct. After selecting a suitable leaf it draws the edges together, securing them with silk, and takes refuge in this retreat. In feeding, the larva usually crawls out upon the stem to an adjoining leaf, but quite often, in its sluggishness, it attacks the base of its shelter, literally devouring its own home.

A young caterpillar seems to have no idea of the fitness of things, and constructs an abode large enough for a full grown "worm," secreting itself in the smaller end of its house, which,

upon a hasty examination, might be mistaken for an abandoned retreat of a mature larva.

The larva is a dirty white or soiled green color, of a granular appearance, with a large head, the body tapering slightly backward. Before suspension it has become a watery green, and after attaching itself to the silk button, it rests in a circular or loop-like position, the head bent forward till it quite reaches the button.

The pupa is usually of a beautiful green color, but sometimes is speckled with brown, and occasionally of a brown tint altogether, while rarely it is almost black. The abbreviated abdomen, the green color and appearance of the pupa in suspension reminds the observer of the pupa of *Archippus*, but the resemblance is not striking.

The pupal period is seven or eight days. For twelve hours before giving the imago the color and markings of the wings in miniature, beneath the pupal sheath, may be distinctly seen, and it is as easy to distinguish the females from the males by the wing band as it is among the imagos.

The fresh imagos will hang in the cage for some time unless crowded, without fluttering, and often when taken between the thumb and finger after having been out four or five hours they will fain death, sometimes dropping to the bottom of the cage when an attempt is being made to remove them. This is oftener the case, however, when they are fresh from the pupa and with no strength of wing. I have noticed the same thing in *Vanessa antiopa*, and perhaps this "'possum policy" is common to many diurnals.

The male imagos differ little in color or markings, being a uniform reddish brown with a darker border to the wings. An occasional ♂, however, displays a faint cross band on the forward wings, or, more properly, the broken boundary lines of a band-like field, and the same more rarely on the hind wings.

The females differ much in color and the appearance of the band. The underwings of the ♀ vary from a reddish brown to a yellowish brown.

The females of the earlier broods have nearly a uniform color over the entire wings, the band being merely outlined by bounding lines, or if the band differ in color from the rest of the wing it is not a noticeable difference. Moreover, the ground color of these earlier females is a brownish red, but paler than in the males.

The females of the later broods are usually lighter in color, and in most cases with more pronounced bands on the wings.

The band is sometimes almost yellow in contrast with a brownish red wing, making a very attractive cabinet specimen.

Often the hind wings are a shade lighter in color than the forward ones, and occasionally there is a row of yellow points or small spots beyond the band on this wing, and very rarely so on the front wing. The more distinct band distinguishes the later from the earlier female.

This butterfly may be seen by the roadside, near its food-plant, in sunny places, or about streams of water. The ♀ is rarely met with away from *Croton*, while the ♂ wanders broadly. At some damp place he may be found sipping, but it takes a clever hand to capture him. At the slightest jar he darts into the neighboring tree tops with the rapidity of an arrow, and it takes a quick eye even to follow him. He may come back, but his coming is as sudden as his going, and before you have collected yourself for a forward movement he is off again, and he rarely settles in the same place twice. With his wings folded, he defies detection among the brown leaves or stones, and you must flush him before you take him, and once flushed nothing but skillful manœuvreing can outwit him.

The larva of *Paphia troglodita* feeds on both *Croton capitatum* and *C. monanthogynum*, both of which grow here, often together. The former, however, seems to be the preferred food-plant. In one plant last August I counted twenty-five larvæ of all sizes, from those just hatched to those full grown. On another plant sixteen.

ELEMENTARY ENTOMOLOGY.

Ninth Paper.—Classification of Insects.

The number of kinds of insects is very great, so that no one can hope to study minutely the structure, habits and transformations of but very few of them. But enough can easily be learned about the various kinds in a general way, to know that the whole great group of insects can be successively subdivided into smaller and smaller groups.

What we may call the unit in this subdivision or *classification*,

is the *species*.* By a species of plants, animals, or insects, we mean a group of individual plants, animals, or insects (1) alike in appearance and (2) capable of producing fertile offspring among themselves.† The first part (1) of this definition is *morphological*, that is, it has to do with form, structure, etc.; the second part (2) is *physiological*, or has to do with functions or actions.

The morphological part of the definition, "alike in appearance," admits of variations. It is well known that of very many animals and plants there are *varieties*, differing more or less in appearance, and that individuals of two different varieties, interbreeding, will produce fertile offspring. For this reason we must consider these two varieties to belong to one and the same species. On the other hand, two animals or plants, differing more or less in appearance, which will not produce fertile offspring between each other, must be considered to belong to different species.

Practically, in the study of insects, we can very rarely apply the second or physiological part of our definition. We must, therefore, rely to a very great extent on the morphological part. If we meet with two insects differing in structure, form, color, etc., or any or all of these characteristics, we must consider them as of different species, either until we learn of other insects intermediate between these two, and which "quite bridge over the difference previously supposed to exist" between them, or until we learn that these two insects, interbreeding, will produce fertile offspring. But in applying these principles in our study, we must be cautious about two things: in affirming the existence of "new," that is, undescribed species, based on the existence of single, more or less doubtful specimens; —— and in regarding as of different species, the two dissimilar sexes of one and the same species.

But after having attempted thus much in explanation of what a species is, it cannot be too strongly insisted that *no hard and fast lines exist in nature to separate species*. Indeed, the designation of certain groups as "species," "genera," "orders,"

* Experience has shown that it is well to point out that the singular and the plural o this word are spelled alike—*species*.

† In the preparation of this paper the writer is partly indebted to Prof. St. George Mivart's work on "The Cat," chap. xii. 1881.

etc., is rather for purposes of convenience than as statements of absolute differences.

Groups of species form *genera.* A genus cannot be easily defined, even in the imperfect way in which we have defined a species. All the species belonging to the same genus possess certain structural characters in common.

Groups of genera form *families;* groups of families form *orders;* groups of orders form *classes.* Two classes differ from each other by characters more widely different than those which divide two orders, and so on down the scale. Intermediate groups, such as *subclasses*, between classes and orders; *suborders*, between orders and families; *subfamilies*, between families and genera; and *subgenera*, between genera and species, are also employed in classification. A *tribe* is a division sometimes placed between a family and a subfamily; sometimes between a family and an order.

The scientific nomenclature employed for insects (as for all animals and plants) is to give to each species two names of either Greek or Latin form. Thus, the name of the Honey Bee is *Apis mellifica.* The first name is *generic*, the second *specific.* A familiar comparison is that which likens the generic name to a person's surname, the specific name to his individual, or Christian name. This binomial nomenclature is dated from the time of Carl von Linné (Linnaeus, b. 1707, d. 1778), the great Swedish systematist. Linné's genera, in very many cases, correspond to our present families, or even suborders. The constant discovery of species unknown to Linné, rendered his genera large and unwieldy, and revealed characters for the subdivision of his genera into smaller genera. The abbreviated name of the author who first proposed the name of the insect in question, usually follows the specific name. Although usage in this respect varies, it is best that the author's name should be that of him who first gave the specific name, regardless of the genus in which he placed it.

It has frequently happened that the same species of insect has received several specific names from different authors, due to such causes as the insufficiency of previous descriptions, describing two dissimilar sexes of the same species as different species, ignorance of the existence of previous descriptions, insufficiency of the characters given as separating two species at one time presumed to be distinct, etc. In such cases *the* name of the spe-

cies is to be the one first given to it, or in some fewer cases, that one which has been most commonly used. The other names are *synonyms*. To determine the correct name of a species and its synonymy is very frequently a most difficult task, and in some cases can only be decided by a comparison of the types of the descriptions concerned.

Family names are usually formed from the name of the principal genus with the termination *idæ* added. To a less extent subfamily names end in *inæ*, also formed from generic names.

The *type* of a genus is that species which best represents the characters of that genus; the *typical* genus or family, is the most representative genus or family of the larger group to which it belongs. The *type* or *types* of a species are the individual specimens from which the species was described. P. P. C.

———o———

COMPOSIA FIDELISSIMA *versus* C. OLYMPIA.

BY HARRISON G. DYAR.

On opening the December number of ENTOMOLOGICAL NEWS I was pleased to see Prof. French's excellent figure of *Composia olympia* Butl., but I wish to state that it does not differ in any particular from my examples of *C. fidelissima* H. S., and that there is only one species of *Composia* now known from Florida.

The question resolves itself into one of the correct determination of the species, and I append Herrich-Schaeffer's description: that of Mr. Butler I have not been able to see. Further than this I have seen in the American Museum of Natural History, by the kindness of Mr. Beutenmüller, two specimens of this species, which, I am informed, are the ones that were before Mr. Grote at the time of his writing on the Zygænidæ of Cuba,* where they are referred to as *fidelissima*. It is possible that Mr. Butler has redescribed this species under the name *olympia*, but this point I am not now in a position to decide.

Composia fidelissima Her.-Sch.

1866—Her.-Sch., Cor. Bl. Reg. No. 9, p. 132.

1867—Grote, Proc. Ent. Soc. Phil. vi, 303.

". . . . Nigra, cyaneonitida, punctis acpitis, thoracis et baseos alarum anter. niveis; maculis niveis ante limbum alarum omnium, præterea seriebus duabus costalibus anteriorum, maculisque tribus purpureis versus basin costæ."

* Proc. Ent. Soc. Phil.

Unless there are two closely-allied species of *Composia* in Cuba the above description applies well to the present form, except that the underside is not described.

NOTE ON THE HABIT OF COMPOSIA FIDELISSIMA H.-S.—Examples of this species were taken by me on the east shore of Lake Worth, Florida, as already noted in these pages, and they exhibited a means of defence which I have not observed in any other moth. When captured, so that it was unable to fly, the insect, by expanding and contracting its abdomen, forced a column of yellowish froth out of the centre of its thorax above. The froth was of about the consistency of soap-suds, and the little bubbles, of which it was composed, "went out" after a time leaving a yellow stain. All that were taken, including individuals of both sexes, behaved in this manner, with the exception of two, in one of which the froth exuded from a point in the underside of the abdomen, and in the other from the end of a broken vein of one hind wing. It would appear as if this froth was formed from the blood of the insect, which was forced out by the pressure of contracting the abdomen from the point of least resistance, usually the centre of the thorax, where there is probably a small aperture. HARRISON G. DYAR.

A CONTRIBUTION TO THE ODONATA OF MAINE.

Specimens in the Maine State College Collection, or taken near Orono, Penobscot County, Me., in 1890.

BY F. L. HARVEY.

Tribe I.—AGRIONINA.

Subfamily 1.—CALOPTERYGINA.

1. *Calopteryx maculata* Beauvois.—Common over running water. Chemo Stream, Bradley, July. Several pairs taken mating. The female usually, when followed by the male, comes to rest on the alder bushes. The male flies over her and seizes her by the neck; she then turns her abdomen under to the second segment of the male.

2. *Calopteryx æquabilis* Say.—Scarce; only one pair taken July. Flying over water with the above.

Subfamily 2.—AGRIONINA.

3. *Argia violacea* Hagen.—Chemo Stream, July 15th; Otter Creek, August 30th; over bogs and ponds. Common.

4. *Argia putrida* Hagen.—August 8th; over dry road. Rather common.

5. *Argia apicalis* Say.—August 8th; over dry road with above. A single ♀.

6. *Ischnura verticalis* Say.—Chemo bog, July; Frog Pond, Orono, September 3d; several pairs mating. This species had the habit of lighting on the surface of confervæ, and flying so close to the water they were hard to take with a net.

♀ orange form.* Not rare over Chemo bog. July.

(To be continued.)

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

In the future all papers received for publication in the News will be printed according to date of reception.

☞ **See change of wording in notice of Identification of Insects.**

FROM A FORMER SUBSCRIBER.—I have no intention of taking the NEWS another year. It is too advanced for me; it shoots over my head and seldom hits me.

QUERY.—Has any entomologist noticed the effect of thunder storms upon larva? It has been a source of considerable thought to me that this may be one of the causes of the scarcity of certain common species of our fauna. I base the idea on the following experience: sometime ago I received a quill of *Saturnia perneyi* eggs, which in due time produced larva, but very early, and I had quite a task to discover the food-plant. I had received information with the eggs "that they fed on oak." I tried all the oaks I could think of, and nearly lost all my larva; at last I tried

* Following my identifications of Miss Wadsworth's Odonata, Prof. Harvey had referred the orange females to *Rambürii* Selys. I am now satisfied that the specimens quoted in Miss Wadsworth's list as "*I. Rambürii* female orange var." (ENT. NEWS, I, p. 36, No. 4) are really the orange females of *verticalis*. With Prof. Harvey's permission I have made a similar change in his MS. The orange females of *verticalis* have a narrow humeral black stripe on each side of the dorsum of the thorax, and the 1st, 2d and basal part of the 3d abdominal segment are orange on the dorsum. The orange females of *Rambürii* have no humeral thoracic stripe, and the orange at the base of the abdominal dorsum is confined to the first and the base of the second segment.—PHILIP P. CALVERT.

Pin Oak, which they fed on readily, and I succeeded in getting several imagos. From a pair of these I started the second brood, now knowing the food-plant I lost none by starvation. During the latter part of July I had 133 larva between the second and third moults; my breeding-box was covered with wire, such as is used for window-screens, etc., and was placed near an open window, on the second floor, facing West. During the afternoon a terrific thunder storm raged, the lightning vivid and close. During the storm I went to close the window when I found a number of the larva hanging limp and dead over the boughs of the food. After the storm I took from the cage 71 dead larva. The rest appeared all right, but somewhat sluggish for a day or so; during the early part of August, and between the third and fourth moult, we had a similar storm, with the same effect on the larva, for, on the next day, I found all dead but 13, which I succeeded in raising to imagines. Two years ago I was raising a brood of *Telea polyphemus*, which you notice is closely allied to the former, when the same phenomena took place, and I lost nearly all the brood. Was it the electricity, the heavy thunder claps, or natural causes? Has any entomologist had similar experience with other species?

JAMES S. JOHNSON.

THE larvæ of the *Papilio anchisiades* live on the lime or orange trees, which they do a good deal of harm to. When young they are of a dirty yellowish red color, glossy and quasi-transparent; when full grown they are about two inches long, of a dark brown color with irregular markings of cream color. I captured a group of ten on the 18th of July, 1889, on the leaves of a lime tree, the branch having over 100 leaves. I cut this branch from the trunk of the tree, placed it in my breeding cages at six P.M.; revisited it on the next day and found only the bare stalks of the branch, all of the leaves having been consumed. The larvæ feed at night, and in the day are seen grouped together in various numbers one over the other; when disturbed, like all caterpillars of the genus *Papilio*, they emit two horns from the ring immediately preceding the head, which is the thoracic portion of the future adult, giving off at the same time a most infectious smell. I always thought that this smell emanated from the protrusion of the horns, but I noticed that at that moment of throwing them off, they discharged a greenish liquid from their mouths which I ascertained to be the substance that smelled. I fed them up to the 16th of August, when they were transformed into chrysalids. In this stage they are very much, both in color and shape, like a piece of decayed wood. The caterpillar before completing its transformation spends about 24 hours motionless on the spot where it is to effect the change, fixes itself tightly with a gummy substance by the anus; then provides two strings which are passed higher up, and, as soon as ready, lets go the place where it held with its legs, and the wonderful motionless, though living insect, lays there at an angle of 45 for 17 days, for on the 2d of September I contemplated the marvellous metamorphosis. There was the *Papilio anchisiades* weak and almost helpless for about three hours, but soon to be seen flitting about the lime tree.—H. CARACCIOLO, Trinidad.

VANESSA URTIOÆ.—From Oakland, Cal., I received two specimens of a year ago. They were taken in suburbs of Oakland by the children of a friend of mine in the Summer or Autumn of 1889. They arrived with a lot of diurnals containing a number of *V. californica* in the Spring of 1890, and, inasmuch as the most of those *Vanessa* were oily, I did not relax specimens until I had time to de-oil them, and when I discovered *V. urtioæ* among the lot, was puzzled to know what they were. I had no European specimens in my collection. It is fully forty years ago since I took any in my native land, and had forgotten what little I then knew of this species. I possess Emmons' "Agricult. Nat. History of New York," in which an illustration is given, which agrees perfectly with my *V. urtioæ*.

In referring to Dr. H. Strecker's "Synonymical Catalogue of Macrolepidoptera" 1878, I find under genus *Vanessa*, page 133, the following foot-note: "Emmons, in 'Agr. Nat. Hist.' N. Y., v, p. 209, t. 46 (1854), describes and figures *V. urtioæ*, stating that it occurred in New York,—*of course erroneously, as no authenticated instance of its capture in this country is known.*" Italics are mine.

My entomological literature is very limited, and I have no knowledge whether its capture in this country is reported or not. I took a specimen to the assistant of Mr. B. Neumoegen, Mr. J. Doll, and the latter confirmed that it was *V. urtioæ*, but doubted its occurrence in this country until I assured him that it was taken in California.

My friend or his children are not entomologists, and I had to instruct them by letter where and how to capture Lepidoptera, and many of those first received were anything but perfect specimens. In coloring, *V. urtioæ* are good, but devoid of antennæ. One of those children had a fondness for studying insects, and I have succeeded in keeping him, a eleven-year old boy, busy taking many nice specimens for me, inasmuch as he now understands better how to handle Lepidoptera.

RICHARD E. KUNZE, M.D.

MR. A. SIDNEY OLLIFF, late assistant in the museum, Sidney, Australia, has been appointed to the newly-instituted office of Government Entomologist in the Department of Agriculture, New South Wales. His duties will be chiefly the study of insects affecting fruits and crops, whether injurious or beneficial, and publishing reports on the results of the information of farmers and horticulturists. According to the latest news as to the new insect pest, Mr. Olliff will not lack employment.

EGG PARASITES.—From a group of eggs similar to those sent to the Academy, there escaped a number of flies kindly identified by Mr. L. O. Howard as a new species of *Hadronotus*, a proctotrupid of the subfamily Scelioninæ. The present group, apparently alike, though lighter in color, being found upon a green stem, was placed in a bottle with a little water to maintain the vegetable growth. The eggs are of a light bronze color, oval, with a network of surface markings and a crown of spines near the upper end. From them hatched an equal number of hemipterous larvæ that at first gathered upon the underside of a leaf. Desiring to learn what

the mature insect was to which the *Hadronotus* had acted as an egg parasite, an attempt was made to raise these larvæ, but they evidently were not vegetable feeders, for after shedding their first skins they died one after another, never having attached themselves to the stem. Subsequently we were informed by Mr. Howard that the eggs from which the *Hadronotus* issued are those of the common *Podisus spinosus*, and that he finds that Prof. Riley has in the National Museum collection the same parasite reared from the eggs of the same species by Mr. Schwarz at Selma, Ala., in September, 1880.—EDWARD POTTS.

HABITS OF BEES.—On the north side of a depressed roadway at Wawa, Pa., for some hundreds of feet, the perpendicular bank of rotten rock through a depth of about two feet below the sod, was found to be covered with small perforations resembling shot marks. These were occupied by a small, solitary bee, identified as *Halictus confusus* Smith, that during the months of July and August, and most abundantly during the latter month, hovered along the bank, sometimes laden with pollen dust, each seeking its own proper opening. Frequently, on alighting, one would be met at the door of a hole by a janitor who stood on the watch, its cervical head just visible at the entrance. The bee never tried to force its way in, but at once sought another hole. To ascertain the depth of these excavations, we probed a large number with slender grass stems, and in many cases could only penetrate four or five inches. In others, however, a foot was reached easily, and in one instance eighteen inches. The bees were most active in the hot sunlight.—EDWARD POTTS.

A DISPLACEMENT.—*Phyllotretra vittata*, always a common species in the vicinity of Philadelphia, especially below the city, on both sides of the Delaware River, seemed to be completely displaced last season by *P. sinuata*. To the best of the writer's knowledge *P. sinuata* was previously unknown to this section, but appeared in great numbers during June and July. But a few isolated specimens of *P. vittata* were noted during the season, it being almost as unusual to find as *P. bipustulata*.—C. LIEBECK.

Limnichus punctatus and *Heterocerus pusillus* were taken somewhat abundantly in an abandoned iron-ore pit in Montgomery County, Pennsylvania, during June. Small pools of water at the bottom furnished the means to drench the sloping sides of the pit and washing out quite a number of each species. *H. pusillus* has not heretofore been recorded from points east of Allegheny, Pa. All the specimens of *L. punctatus*, upwards of forty in number, were taken from a space not more than three feet square. Although the pit was a large one, none were taken outside of this limited space. *H. pusillus*, however, was scattered over the entire place.—CHAS. LIEBECK.

THE inclosed slip is from one of our papers. To some inquirers about this bug I stated I thought it a *real lightning bug*, but some are disposed to think it a Humbug, but I objected, that such a bug was unknown in Philadelphia.—JOHN HAMILTON.

INOCULATED WITH ELECTRICITY.—Philadelphia, Dec. 30. Physicians and medical students have been studying with great interest a case without a parallel, so far as known. Little Mamie Lurker, walking on Girard Avenue a few days ago with her aunt, suddenly stopped, and, putting up her hands to her face, screamed, "I am shot." The aunt seized the child's hands, and immediately staggered back as if she had received an electric shock. A crowd speedily gathered, and a man crushed with his foot a peculiar bright-hued bug, bottle-shaped and hard-shelled, which, falling from a wire overhead, had dropped on the girl's face and stung her.

A bright crimson spot on Mamie's cheek showed where the bug had made the wound, and evidently inoculated her with the electricity with which it was charged by being in contact with the wire. Little would have been thought of the accident had it not been for the peculiar symptoms of the girl, who was nervous and uneasy, and whose grasp sent an indefinable tingling sensation to the hands of everybody who touched her.

Dr. De Beust diagnosed the case as bullia, or vascular poisoning, and administered the remedies usual in cases of that kind. To his astonishment, however, the bright-hued sore on the cheek was followed by other bright-hued eruptions on every part of the body, each one emitting the same peculiar tingling sensation when touched. In his opinion the bug was of a Brazilian species brought to this country in the year of the centennial. The insect in itself is not known to be poisonous, and is distinguished for its peculiar bottle-shaped appearance.

The patient is now considered out of danger, after unremitting attention on the part of the physician, but still suffers from the inoculated electric bite.

OUR collector (NEWS) spent a week under the electric lights before he succeeded in getting a specimen. This was sent to the Determiner who has charge of the Department of Identification of Insects; he recognized the species as *Electricia tomfooleryensis* De Bust.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Twelve names, if possible, will appear in each issue of NEWS, according to number. Address packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

A. G. WEEKS.—1, *Junonia orithya;* 2, *Byblia ilithyia;* 3, *Ergolis ariadne;* 4, *Ixias marianne* ♀; 5, *Junonia lemonias;* 7, *Diadema misippus* ♀; 8, *Euplœa core;* 9, *Pyrrhogyra tipha;* 11, *Eunica monima;* 12, *Danais gilippus*, var. *cleophile;* 13, *Danais archippus;* 14, *Papilio aristolochiæ;* 15, *Callidryas pomona;* 16, *Callidryas pomona;* 17, *Callidryas pomona;* 18, *Callidryas pomona;* 19, *Idmais* sp. ♂; 20, *Diadema misippus* ♂; 21, *Callidryas pyranthe;* 22, *Idmais* sp. ♀; 23, *Junonia œnone*, var. *hierta;* 24, *Pieris mesentina*; 26, *Diadema misippus* ♀.

RALPH HOPLING.—1, *Bradycellus rupestris;* 2, *Cratacanthus dubius;* 3, *Platynus nutans;* 4, *Pterostichus mutus;* 5, *Harpalus viridiæneus;* 6, *Melanophila longipes;* 7, *lost;* 8, *Melanotus communis;* 9, *Elaphidion villosum;* 10, *Elaphidion parallelum;* 11, *Tenebrionellus molitor;* 12, *Tenebrionellus obscurus.*

G. D. B. Lot 2.—1, *Serica sericea;* 2, *Doryphora clivicollis;* 3, *Staphylinus cinnamopterus;* 4, *Cardiophorus convexus;* 5, *Odontota nervosa;* 6, *Paria 6-notata;* 7, *Corymbites tarsalis;* 8, *Podabrus modestus;* 9, *Pterostichus lucublandus;* 10, *Limonius griseus;* 11, *Lucidota atra;* 12, *Melanotus fissilis.*

F. H. HILLMAN.—1, *Dendroctonus terebrans;* 2, *Nemognatha apicalis;* 3, *Cyclocephala longula;* 4, *Megilla vittigera;* 5, *Aphodius nevadensis;* 6, *Lina scripta* var.; 7, *Saprinus lugens;* 8, *Coniontis obesa;* 9, *Nitidula ziczac;* 10, *Notoxus calcaratus;* 11, *Tomicus pini;* 12, *Calospasta mirabilis.*

W. M. HILL.—1, *Clinidium sculptile;* 2, *Megalodacne heros;* 3, *Brontes dubius;* 4, *Onthophagus hecate;* 5, *Stenolophus conjunctus;* 6, *Boletotherus bifurcus;* 7, *Coptocycla guttata;* 8, *Anthonomus* sp.; 9, *Atænius cognatus.*

W. C. WOOD.—1, *Apristus subsulcatus;* 2, *Amara musculus;* 3, *Amara chalcea;* 4, *Atranus pubescens;* 5, *Bembidium contractum;* 6, *Tachys xanthopus?;* 7, *Amara* sp.; 8, *Platynus punctiformis;* 10, *Platydema americanum;* 11, *Pterostichus hicublandus;* 12, *Phaleria testacea.*

D. B. YOUNG.—1, *Tetraopes tetraophthalmus;* 2, *Typocerus velutinus;* 3, *Elaphrus ruscarius;* 4, *Phellopsis obcordata;* 5, *Hister interruptus;* 6, *Chrysomela philadelphica;* 7, *Chrysomela similis;* 8, *Geotrupes Balyi;* 9, *Dicerca divaricata.*

F. C. HARVEY.—1, *Ptinus brunneus.*

Entomological Literature.

NOTES ON THE HABITS AND EARLIER STAGES OF *Cryptophasia unipunctata*, by Henry Edwards (from the Proceedings Linnean Society of New South Wales, vol. v).

THE ENTOMOLOGIST, January, 1891.—The sexes of Lepidoptera, by W. F. de Vismes Kane. Notes on the Lepidoptera of Chiltern Hills, by A. J. Spiller. A Preliminary List of the Insect Fauna of Middlesex, by T. D. A. Cockerell. Contributions to the Chemistry of Insect Colors, by F. H. Perry Coste.—For February, 1891.—Remarks on *Meana strigilis, M. fasciuncula*, and a probable new species of the genus, by Richard South. The Habits and Life-history of the New Zealand glow-worm, by G. V. Hudson. A Preliminary List of the Insects of the Insect Fauna of Middlesex, by T. D. A. Cockerell. Notes on British Lepidoptera; extracted from Continental journals, by W. Warren. Contributions to the Chemistry of Insect Colors, by F. H. Perry Coste. Coleoptera from Kulu, in

N. W. India, by W. H. Bates. New species of Rhopalocera from N. W. China, by J. H. Leech. Descriptions of some new Phytophagous Coleoptera from India, by Martin Jacoby.

ENTOMOLOGIST'S MONTHLY MAGAZINE, January, 1891.—On certain British Species of *Conchylis*, by Lord Walsingham. Can *Deilephila galii* be found in the larval state every year in England? by W. H. Tugwell. *Gelechia sparsiciliella* n. sp , by C. G. Barrett. *Symmoca signatella*, H.-S., a recent addition to the British fauna, by A. F. Griffith. A Fortnight in Algeria, with descriptions of new Lepidoptera, by E. Meyrick. Occurrence at Portland of *Tenia subtilella*, a species new to the British fauna, by N. M. Richardson. On the British species of the genus *Pityophthorus*, by W. F. Blandford. On the Oviposition of *Metœcus paradoxus*, by Algernon Chapman. Note on a new *Cicindela* from North Japan, by G. Lewis. On the British species of the genus *Cicadula*, by James Edwards.

PENNSYLVANIA AND NEW JERSEY SPIDERS OF THE FAMILY LYCOSIDÆ, by Witmer Stone (Proc. Acad. Nat. Sci. 1890, p. 420). A table of the genera and species by which they may be determined is given, and the species described in full. Three new species are described: *Pirata elegans*, *P. marxi* and *Pardosa nigra*.

BIBLIOGRAPHICAL CATALOGUE of the described transformations of N. American Coleoptera, by Wm. Beutenmüller (Jour. N. Y. Microscopical Society, vol. vii, No. 1). Those interested in the subject owe thanks to Mr. Beutenmüller for a very useful work, and one that has cost him much time and labor.

LIST OF THE DIURNAL LEPIDOPTERA taken by Mr. Wm. Doherty, of Cincinnati, in Celebes, June and July, 1887, with descriptions of some apparently new forms, by Rev. W. J. Holland (Proc. Bost. Nat. Hist. Soc. 1890, pages 52 to 79).

SIXTH REPORT OF THE INJURIOUS AND OTHER INSECTS OF THE STATE OF NEW YORK, by J. A. Lintner, Ph.D., State Entomologist. This contains the usual amount of interesting subjects in economic entomology, with a very useful and complete index.

UNIVERSITY OF NEVADA AGRICULTURAL EXPERIMENT STATION, Bull. No. 8, by F. H. Hillman. The Codling moth (*Carpocapsa pomonella*), its life-history, and remedies for its extermination. Bulletin No. 9.—A Serious Rose Pest (*Lithophane antennata*). Bulletin No. 10.—Plant-lice infesting the Apple (illustrated). Bulletin No. 11.—The Pear and Cherry Slug (*Selandria cerasi*).

PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION, Bulletin No. 33, vol. ii, Lafayette, Ind.—Entomological Notes, by T. M. Webster. Experiments with the Plum Curculio. Notes on Strawberry Insects, *Tyloderma fragariæ*. The field cricket, *Haltica ignita*. Some hitherto unrecorded Enemies of Raspberries and Blackberries, *Solenopsis fugax*, *Limonus auripilus*, *Carpophilus brachypterus*, *Inlus impressus*, *Cosmopepla carnifex*.

BIOLOGIA CENTRALI-AMERICANA, Part 39, November, 1890.—Vol. iii, part 1, by G. H. Horn (pp. 193–257, pl. x); vol. iv, part 2, by G. C. Champion (pl. x); vol. iv, part 3, by D. Sharp (41–56); vol. vi, part 1, Supplement, by M. Jacoby (pp. 217–224). Hymenoptera: vol. ii, by C. Cameron (pl. 7). Lepidoptera Rhopalocera: vol. ii, by F. D. Godman and O. Salvin (plates 68, 69). Diptera: vol. ii, by F. M. Van der Wulp (pp. 201–208).

NAT. HIST. OF VICTORIA.—Prodromus of the Zoology of Victoria, Decade 20, by Fred. McCoy. Life-history of *Chelepteryx collesi* with colored figures of imago, larva, chrysalis, cocoon, etc.; also of *Pyrameis itea* and *P. kershawi*.

THE ANNALS AND MAGAZINE OF NATURAL HISTORY, vol. vii, No. 37. —Notes on Longicorn Coleoptera of the Group Cerambycinæ, with descriptions of new genera and species, by Charles J. Gahan. List of Lepidoptera in a collection made by Emin Pasha in Central Africa, by Arthur G. Butler. Descriptions of ten new species of butterflies from the northwest coast of Madagascar, by H. Grose Smith. Description of two new Scarabæidæ of the genus *Phanæus*, by C. O. Waterhouse. Descriptions of new species of Lepidoptera collected by Mr. Herbert Ward at Bangala, on the Congo, by Emily Mary Sharpe. Descriptions of eight new species of Chalcosiidæ, by Herbert Druce. A few remarks on Prof. Packard's papers entitled, "Life-history of *Drepana arcuata*," and "Hints on the Evolution of the Bristles, Spines and Tubercles of certain Caterpillars," by A. G. Butler. Description of a new genus and species of Rhyncophorus Coleoptera, by D. Sharp.

THE TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, Part 4, 1890.*—A Catalogue of the Pyralidina of Sikkim, collected by H. J. Elwes and the late Otto Möller, by Pieter C. T. Snellen, with notes by H. J. Elwes. On a species of Aphideous insects infesting the bread-fruit trees in Ceylon, by Prof. John O. Westwood. Further notes on the synonymy of the genera of Noctuites, by A. G. Butler.

RECORDS OF THE AUSTRALIAN MUSEUM, vol. i, No. 5, Sydney.—Coleoptera: Cicindelidæ, Carabidæ and Buprestidæ, by Thomas G. Sloane, with descriptions of new species.

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, vol. v, Nos. 9 to 12.—Coleopterological Notices, by Thomas L. Casey, mostly devoted to Tenebrionidæ, with descriptions of new species, etc.

ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE, 2e serie, v suppl., 1887–1890.—Contribution to the Study of the Brain in the tracheate Arthropods, by G. Saint Remy; 14 plates, 274 pages. The present paper treats of the Myriapoda, Arachnida and Onychophora.

ZOOLOGICAL RECORD for 1889.—Insecta, by Dr. David Sharp.

* Three plates; two colored.

COMPTE-RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Dec. 6, '90. —Note on the Buprestidæ of Chota-Nagpore,* by C. Kerremans. Note on some Coleoptera Heteromera of Belgium, by L. Coucke. Note on the Trictenotomidæ, Prionidæ and Cerambycidæ of Chota-Nagpore,* by A. Lameere; *Kunbir*, *Sakuntala*, n. gen. Annotations to the lists of indigenous carnivorous Coleoptera, by A. P. de Borre.

SPECIES DES HYMENOPTERES D'EUROPE ET D'ALGERIE, by Ed. Andre, 37e Fascicule, Nov. 1, 1890, 4 plates.

ARCHIV FUR MIKROSCOPISCHE ANATOMIE, xxxvii, heft 4, 1890. The malodoriferous glands of the Forficulidæ, by Dr. J. Vosseler; 1 plate.

BERLINER ENTOMOLOGISCHE ZEITSCHRIFT, xxxv, heft 2, 1890. The group of the Hymenopterous genera *Leucospis* Fab., *Polistomorpha* Westw., and *Marres* Walk.: Monograph,* by A. Schletter; 2 plates, *L. Rileyi*, Mex., n sp. *Hilarimorpha* Schin. is a Leptid, C. R. Osten Sacken.

ZOOLOGISCHER ANZEIGER, Jan. 5, 1891.—On the embryology of *Phalangium*, V. Faussek.

LE NATURALISTE, Jan. 15, 1891.—Diagnoses of new Acarina,* by Dr. E. Trouessart. Entomological Recreation [on the larva of *Teresias serra* Steph.], by M. Decaux.

MYRIAPODA REGNI HUNGARIÆ E COMMISSIONE REGIÆ SOCIETATIS HUNGARICÆ SCIENTIARUM NATURALIUM,* by Dr. Eugenius Daday de Deés. Budapest, 1889, 126 pp., 3 plates. A synopsis of the Myriapoda of Hungary, printed in Magyar, but with the specific, generic and other characters in Latin.

MITTHEILUNGEN DER SECTION FUR NATURKUNDE DES OSTERREICHISCHEN TOURISTEN-CLUB. II. Jahrgang, Wien, 1890.—List of the Arthropoda hitherto found in caves in Europe, by E. Simon, L. Bedel and L. Ganglbauer; comprises Crustacea, Arachnida, Myriapoda, Coleoptera, Orthoptera, Thysanura and Diptera.

SCHRIFTEN DER NATURFORSCHENDEN GESELLSCHAFT IN DANZIG; Neue Folge, VII Bd., 3 heft, 1890.—Life-history of two snout beetles and Insects on ferns, by C. G. A. Brischke. Butterflies caught by *Drosera angelica* Huds., by Dr. H. von Klinggraeff. Addition to Bachman's contributions to the Dipterous fauna of the provinces of West and East Prussia, and Some Ichneumonidæ and Saw-flies entirely new, or new to West Prussia, by C. G. A. Brischke.

IL NATURALISTA SICILIANO, November-December, 1890.—Contributions to the Lepidopterological Fauna of Sicily; descriptions of new species,* by L. Failla-Tedaldi. Studies in Sicilian entomology [Otiorrhynchidæ], by F. Vitale. The light produced by insects, by E Arculeo.

* Contains new species other than North American.

JENAISCHE ZEITSCHRIFT FUR NATURWISSENSCHAFT, XXV, heft 1 and 2, Jena, 1890.—*Hemidiptera Haeckelii*, by Dr. N. Leon. 1 plate. The poison apparatus of *Formica rufa*, a reduced organ, by Dr. O. W. Beyer, 2 pls.

JAHRBUCHER DES NASSAUISCHEN VEREINS FUR NATURKUNDE, Jahrgang 43, Wiesbaden, 1890.—Contributions to the Lepidopterous Fauna of the Malay Archipelago, vi. On the Butterflies of East Java,* by Dr. A. Pagenstecher.

Doings of Societies.

ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES.—A regular meeting was held Jan. 22, 1891, Director Dr. Horn in the chair. Members present: E. T. Cresson, Martindale, Ridings, G. B. Cresson and Skinner. Associates: Calvert, Westcott, Fox, E. Seeber, Liebeck and Dr. Skinner. Mr. Neel visitor. Dr. Horn stated that he had been studying the species of *Agrilus*, and found them more numerous and more difficult than he had imagined, but he hoped to get them in such shape that students could do more with them. The characters of the claws were discussed, and the speaker said it was necessary to see the claws of both sexes and the front and hind claws also. He proposed to divide them into groups separated by different types of claws. The difficulties of the subject were illustrated by drawings on the blackboard, and characters of more or less value were mentioned and considered at length. Mr. Calvert spoke on the genus *Ischnura*, stating that there were two local species: *verticalis* Say and *Ramburii* Selys. Partly owing to the imperfect description in Dr. Hagen's Synopsis of 1861, he had hitherto mistaken the orange females of both *verticalis* and *Ramburii* as belonging to *Ramburii*. He believed that the orange females of *verticalis* could be distinguished from those of *Ramburii* by having a black lateral dorsal thoracic stripe wanting in *Ramburii*. Mr. Martindale mentioned that in the January number of NEWS was an article by Mrs. Slosson on *P. assimilans*, which showed how species could be lost for even a great number of years and then refound. The only specimens known until Mrs. Slosson's rediscovery were the two worn and damaged specimens in the British Museum. He exhibited colored figures of these interesting moths intended for ENTOMOLOGICAL NEWS. He also mentioned here rediscovery of *Seirarctia echo*. Dr. Horn called attention to the fact that, in 1850, on Dr. LeConte'e return from California, he described a species—*Acrepis maculata*. The type of this went to the bottom on its way to Europe. It was recently rediscovered by the speaker in a collection made by the late H. K. Morrison, and none have been found since.

* Contains new species other than North American.

ENTOMOLOGICAL NEWS for February was mailed February 2, 1891.